Session 400

QuickTime Overview

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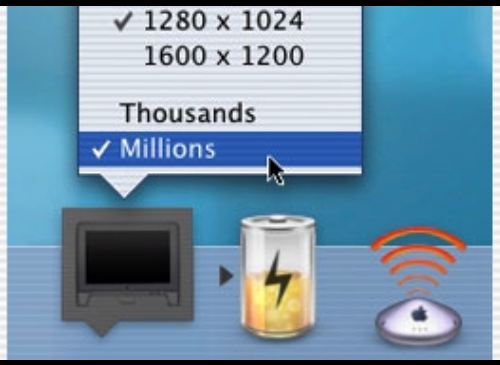
Interactive Media Group

Closing the Chapter on 4



Thank You

QuickTime 4 Goals

- Make streaming a first-class citizen in QuickTime
- Build a world-class streaming broadcast network
- Preserve traditional strengths of QuickTime
  - Industry's best platform for content creation
  - Dominant platform for CD-ROM delivery

How Did We Do?

- Over 150 million copies of the player distributed
- Over 150,000 downloads of the streaming server
- More than 8,000 new products based on QT 4
  - From over 5,000 companies
- Huge ecosystem of partners

QuickTime TV

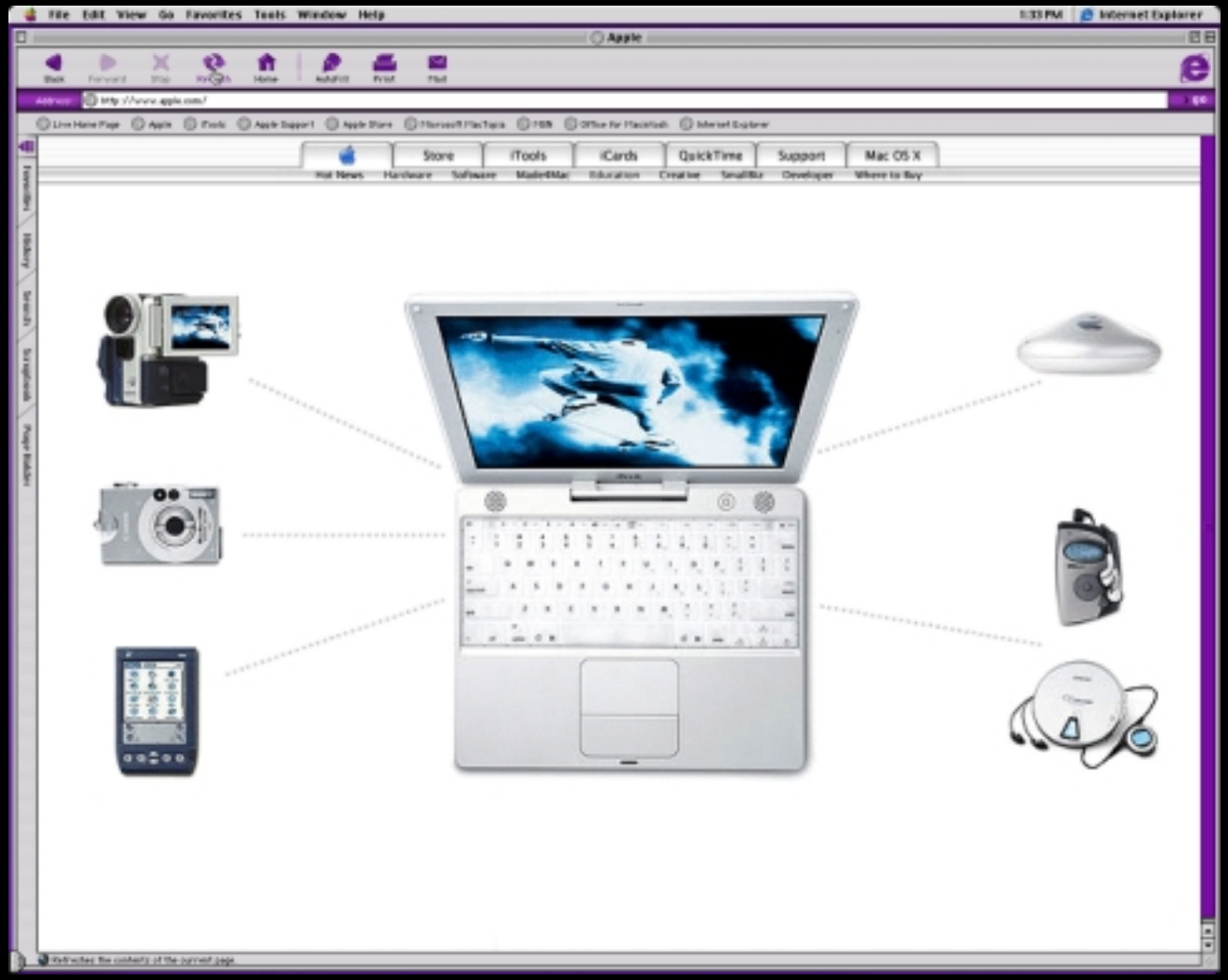
- Over 50 channels
  - CNN, Disney, Nickeloden, ABC, NPR, BBC, HBO, MTV, Bloomberg, ESPN, Fox, Rolling Stone, Sony Music, Warner Bros., and more…
- Hundreds of special live events

Enhanced Music CD

Digital Cameras

- 78 cameras from 14 manufacturers
- Nikon, Fuji, Olympus, Kodak, Seiko Epson, Casio, Sanyo, Panasonic, Minolta, Ricoh, and more…

Powering The Digital Hub



Goodbye,

QuickTime 4

Hello, QuickTime 5

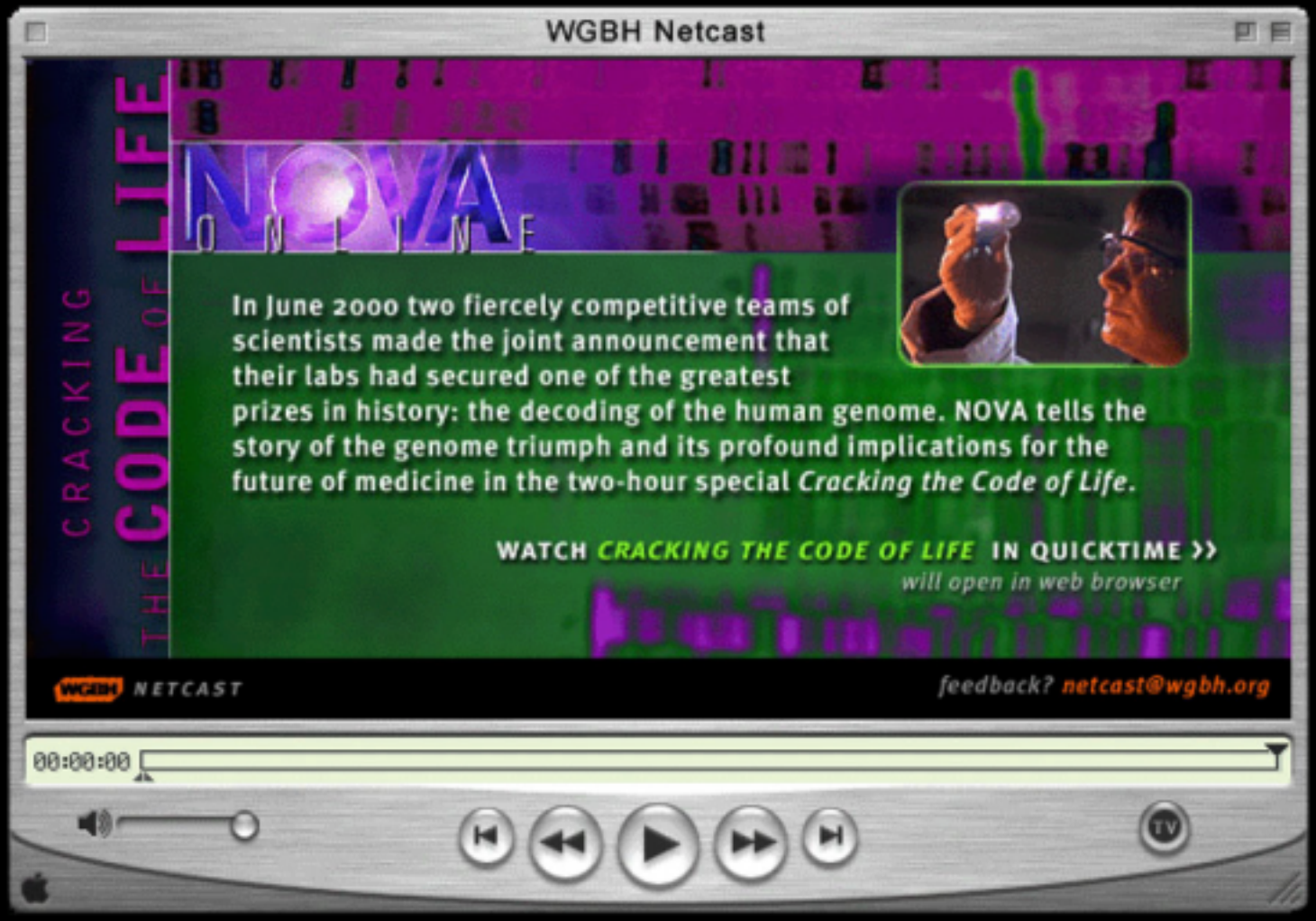
Status So Far…

- Began extensive public preview last fall
- More than 2 million preview participants
- Launched QuickTime 5 at NAB—April 21
- More than 7 million downloads (U.S. only)
- QTSS 3 launched Monday
  - Built into Mac OS X Server v.10
  - Source code available through Darwin

QuickTime 5 and QTSS 3

New and Improved!

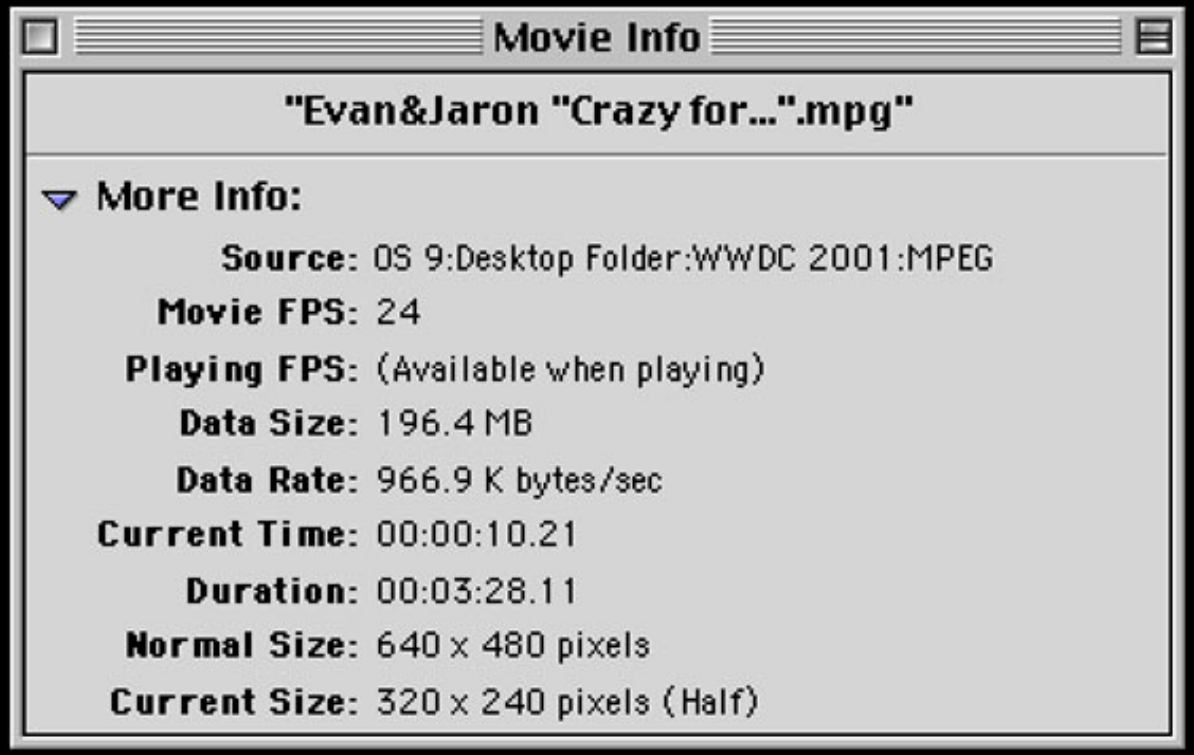
Refined Player Interface



Goodbye, Channel Drawer…

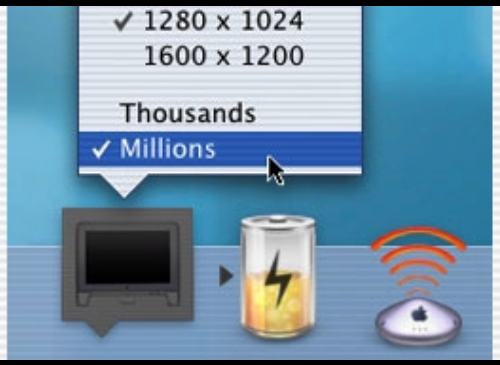
New Audio and Video Controls

Movie Info Summary



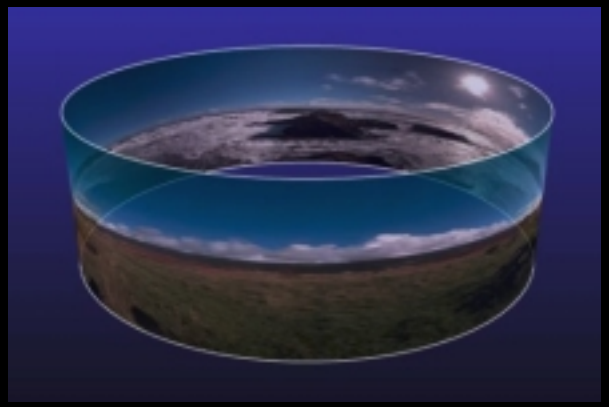
Hot Picks Highlights

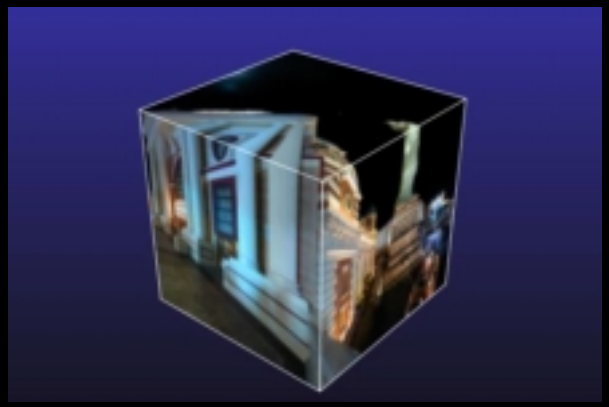
Enhanced Media Support



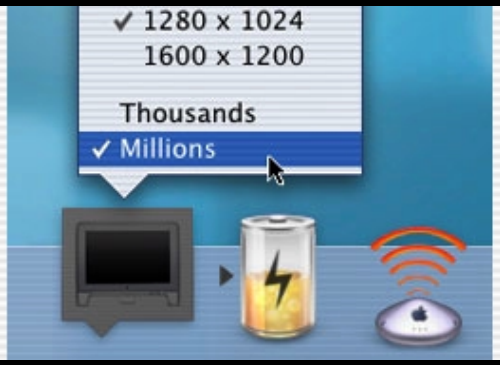
Cubic VR

- Optimized for large vertical viewing angles
  - e.g., Looking all the way up or down
- Compatible at API level with cylindrical panos





VR Demo



New Music Synthesizer

- Advanced wavetable synthesizer
- General MIDI and GS compatible
- Supports DLS2 and SoundFont 2
- Professional-quality synthesis
- Ultra-low latency on Mac OS X

Music Demo

Roadmap

208 Audio Services in Mac OS X	Room J2 **Thurs., 5:00pm**
209 Audio Processing & Sequencing Services	Room J2 **Fri., 3:30pm**
210 MIDI in Mac OS X	Room J2 **Fri., 5:00pm**
401 Interactive Aspects of QuickTime	Room A2 **Wed., 2:00pm**

Enhanced DV

- DV exploits Velocity Engine and MP
  - Accelerates encode and decode
- Significantly improved image quality in all modes

Real-Time Effects and Transitions

- Effects and transitions since QuickTime 3
- QuickTime 5 adds hardware-acceleration
- Supported in Final Cut Pro and Adobe Premiere

Roadmap

402 QuickTime for Professional Video

Room A2
Wed., 3:30pm

MPEG-1

- Video CD
- Defacto standard for intranet streaming
- Streams on Mac OS AND Windows
- Conforms to IETF RTP protocols (RFC 2250)
- Supports elementary and muxed streams
  - Decodes layer 1, 2, and 3 audio

MPEG.ORG

Component Downloader

- Automatic detection of missing components
- On-demand installation of new software
- BeHere, On2, Pulse
- We want your components
- For more information:
  http://developer.apple.com/quicktime/qtcdform.html

QuickTime and XML

- QuickTime will eat XML files
- QuickTime provides XML parsing helpers
- Searches for handlers based on MIME type
- You provide a custom XML importer
- Enables template-driven authoring

XML Demo

Streaming Improvements

Skip Protection

- Fundamental improvement to QoS
  - Client and server work together
- Retransmission of lost packets
- Scaling of stream during net congestion
- Aggressive buffering of media data

Live Broadcast

- Public APIs to manage streaming broadcasts
- Extensible media source features
- Now supports broadcast over TCP
  - Improves overall QoS
- Available on Mac OS

Roadmap

403 Broadcasting Live with QuickTime Streaming

Room A2
Wed., 5:00pm

Shoutcast

- MP3 streamed over HTTP
- Popular MP3 Internet radio format
- Integrates with other QuickTime media types

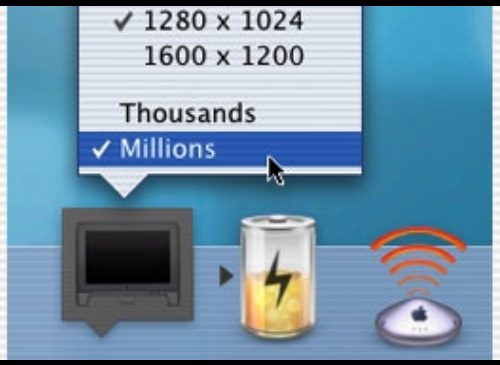
QuickTime Streaming Server 3

- More than 250 companies license server source
  - Including Sun, IBM, and Real Networks
- Web-based server administration
- Enhanced security of streams
  - Via digest mode authentication
- Supports reliable-delivery broadcast
- Better caching proxy server support
- Skip protection

Roadmap

406 QuickTime & Darwin Streaming Server Overview	Civic **Thurs., 9:00am**
407 Customizing QuickTime & Darwin Streaming Server	Civic **Thurs., 10:30am**

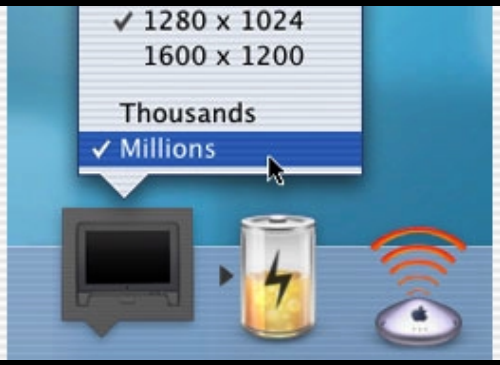
Interactivity



Macromedia Flash 4

- Powerful text field input features
- New server-oriented features
- New wired actions interface with Flash tracks

Flash Demo



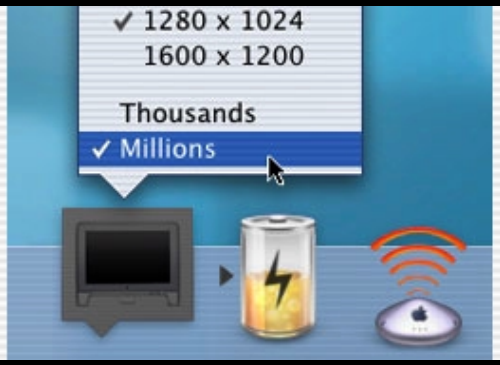
Wired Movies

- Over 100 new wired behaviors and properties
  - Flash, Text, QTLists, Track, VR, Application, . . .
- QTList actions enable communication with servers
  - XML-based interaction

Media Skins

- Customized movie interfaces
- Non-rectangular windows
- Easy to create
- Perfect for media branding

Media Skins Demo



Roadmap

401 Interactive Aspects of QuickTime	Room A2 **Wed., 2:00pm**
507 QuickTime for Java	Civic **Thurs., 2:00pm**

QuickTime and Mac OS X

- QuickTime creation and publishing
- The power and flexibility of Unix
- The simplicity of Mac
- An unprecedented combination

Proxy Edit Demo

Just Scratching the Surface…

- New Player appearance
- Channel wells
- Better favorites management
- Video & audio controls
- Improved movie info
- Media skins
- DV improvements
- Latency Management APIs
- AppleScript enhancements
- Cubic VR
- Display VR hot spots
- VR Exporters
- Flash 4
- Async movie loading
- MPEG-1 streaming
- MPEG-1 on Windows
- Launch player from browser text links
- Digest mode authentication
- App can support faststart and autoplay behavior
- New XML importers
- Altivec- & MP-enhanced H.263
- Skip protection
- New music synth
- DLS2 & SoundFont compatible
- QuickTime Streaming Server 3
- Web-based server administration
- New and improved hinters
- QTJava to support new APIs
- Faster Qdesign codec
- Navigate password-protected proxies
- Broadcast APIs
- RT features
- New wired movie messages
- QTList
- Media sharing
- 3rd-party component download
- Better installer
- Shoutcast streaming
- Support .QTL extension
- New embed tags
- Control panel enhancements
- Sprites take less RAM
- XML event-based parsing
- Hot Picks movie

QuickTime 5 and QuickTime Streaming Server 3

An Industry at Crossroads

Doom and Gloom

There Are Real Problems

- Production costs
- Distribution costs
- Format churn
  - Huge cost multiplier
  - Limits reach
  - Impedes broad compatibility
- Proprietary technology is in the way

What They Want You to Believe

- Standards impede innovation
- Standards are obsolete at birth
- Standards don’t optimize for quality

Reality—Standards Build Markets

- TV Broadcast
- Telecommunications
- Consumer electronics
- And, of course, the Internet

Standards Solve Problems

- Support compatibility over time
- Support interoperability between vendors
- Minimize over-reliance on a single vendor
  - No one company can service all the needs
  - No one implementation is best for every use

Standards Fuel Innovation

- Portable media devices are hot
  - Music players, cameras, camcorders
- Wired technologies link portable devices to PC
  - USB, Firewire
- Optical disc storage bridges PC to CE
  - DVD-R, CD-RW
- Wireless networking brings web access
  - Handhelds, mobile phones

Case in Point—MPEG-2

- Standardized in 1994
- Not the most aggressive compression algorithm
- Yet momentum continues to grow
- Digital satellite, Terrestrial cable, DVD, HDTV
- Quality keeps getting better
- Costs keep going down

MPEG-2 Demo

ISO/IEC 14496-1:2001
a.k.a. MPEG-4

What Is MPEG-4?

Scene Description

Interactivity

Synchronization

MPEG - J	Audio	Visual
(Java)	Speech General Synthetic Speech Synthetic Audio	Video Still Images Text 2D Graphic 3D Graphic Face and Body Animation

Intellectual Property Management and Protection

File Format (QuickTime)	Data Transport (Flexmux/Transmux)

Who Else Will Use MPEG-4?

- Internet Streaming Media Alliance
  - Philips, Sun, IBM, Cisco, Kasenna, Apple, and many others
  - www.isma.tv
- 3GPP and Wireless Multimedia Forum
  - Next-generation mobile phones
- JPEG 2000
  - Will replace JPEG and Motion JPEG

Apple's Plan

- MPEG will be a first-class citizen in QuickTime
- Focus: core audio and video streaming features
- Pure MPEG-4 will be great
  - Okay to mix MPEG-4 with other media
- Availability to be announced later this year

MPEG-4 Demo

Roadmap

403 Broadcasting Live with QuickTime Streaming

Room A2
Wed., 5:00pm

Public Service Announcement

Closing Thoughts…

- Apple is embracing open standards
  - Come help us make MPEG-4 a success
- QuickTime 5
- Let us know what you think

Roadmap

FF109 Feedback Forum: QucikTime

Room J1
Thurs., 3:30pm

ANNOUNCING

QuickTime Live!

October 8–11, 2001
The Beverly Hilton Hotel
Beverly Hills, CA

Full day workshops, Conference Sessions,
QuickTime Product Showcase, Keynotes and Social Events with the community
of QuickTime Developers, Content Creators, and New Media Business Professionals.
Get Face-to-Face with the QuickTime team for a week of training, business
Opportunities and industry perspectives that you can't get anywhere else.

www.apple.com/quicktimelive

Develop. Produce. Deliver.

Who to Contact

Jeff Lowe
QuickTime Technology Manager
Apple Worldwide Developer Relations
jefflowe@apple.com

http://developer.apple.com/events/urls.html

WWDC

Worldwide Developers Conference 2001